

# California Arbovirus Surveillance Bulletin # 35

Week 5 Friday, January 30, 2004

## 2003 Summary Comments:

### Human cases

A total of 1,096 humans were tested for West Nile virus by the Viral and Rickettsial Disease Laboratory (VRDL) in 2003.

Three locally acquired human cases of West Nile virus were identified in Imperial, Riverside, and Los Angeles counties in 2003. A 31 year-old male from Riverside County was diagnosed with septic meningitis in September; he recovered fully. A 46 year-old male from Imperial County was diagnosed with aseptic meningitis in October; he has also recovered. A 61 year-old male from Los Angeles County was diagnosed with a febrile illness in October.

Nineteen imported WN cases were identified in 2003. These cases were California residents who had traveled to a WN endemic area or residents of WN endemic states who became ill in California. Extensive testing and case follow-up were initiated on each of these cases to confirm WN infection. The counties where the imported cases occurred included Los Angeles (6), Alameda (2), Riverside (2), Kern (2), San Diego (2), San Mateo (1), Sacramento (1), Shasta (1), Sonoma (1) and Ventura (1). Additionally, one blood donor was identified from Los Angeles County. He became clinically ill after donation. The patient most likely acquired the infection in Colorado.

A 19 year-old woman from Sonoma County is the nineteenth imported case for 2003. Her onset of aseptic meningitis was on August 24, 2003 while she was in Wyoming. It is believed that she acquired the infection while in Wyoming. Samples were submitted to VRDL in early January 2004.

### Equine

A total of 224 horses with suspected viral encephalitis were tested for WNV by the California Animal Health & Safety Laboratory and for WEE virus by the UC Davis Center for Vectorborne Diseases (CVEC). A 20 year-old gelding stabled in Alpine in San Diego County developed WNV neurologic signs on October 17. The horse had no history of travel outside of CA. This is the first and only confirmed case of indigenously acquired WNV infection in a California horse. The horse recovered from the infection.

Two imported WNV equine cases were identified in 2003. The horses came from Texas and Arizona. All other horses tested were negative for WNV and WEE.

### Sentinel chickens

VRDL tested a total of 30,065 chicken filter paper/sera samples for antibodies to SLE, WEE, and WNV in 2003. In addition, two districts-- the Sacramento-Yolo MVCD (1,568 samples) and the San Gabriel Valley MVCD (1,464 samples) tested their own sentinel chicken flocks.

Seroconversions to WNV were first detected from filter paper strips collected on August 4th from six chickens in two flocks located near Niland in Imperial County. A total of 70 WNV seroconversions were detected from Imperial (55) and Riverside (15) counties in nine flocks.

Thirteen SLE seroconversions were identified in five flocks from Imperial (2), Los Angeles (2), Riverside (8) and San Bernardino (1) counties. The first SLE seroconversion was detected in a sentinel flock bled on September 2 in Imperial County.

The first WEE seroconversions were confirmed in two chickens in a sentinel flock located near Carlsbad in San Diego County. The probable seroconversion date for both chickens was November 4th.

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## Mosquito Pools

In 2003, the UC Davis Center for Vectorborne Disease Research (CVEC) tested 10,297 mosquito pools for arboviruses. Of these, 26 pools of *Culex tarsalis* and six pools of *Cx. quinquefasciatus* tested positive for WNV. Four pools of *Cx. tarsalis* and one pool of *Cx. quinquefasciatus* were positive for SLE. Five pools of *Ochlerotatus melanimon* were positive for the California encephalitis group virus (CE); and one pool of *Cx. tarsalis* was positive for WEE.

WNV was first detected in California from a pool of *Cx. tarsalis* collected on July 16 from El Centro in Imperial County. Additional WNV positive pools were detected in Imperial (16), Riverside (10), and Los Angeles (6 pools of *Cx. quinquefasciatus*).

SLE was first detected in a pool of *Cx. tarsalis* collected on July 3rd from Mecca in Riverside County. A total of 13 SLE positive pools were detected in four pools of *Cx. tarsalis* from Imperial (1) and Riverside (3) and one pool of *Cx. quinquefasciatus* from Los Angeles (1) counties.

The first detection of CE was from four pools of *Ochlerotatus melanimon* collected on June 19th from Kern County. A total of five *Oc. melanimon* pools were detected from Kern (4) and Inyo (1) counties.

WEE was detected in a pool of *Cx. tarsalis* collected on August 7th from Penasquitos Lagoon in San Diego County.

## Dead Bird Surveillance

The hotline received 8650 dead bird reports from 57 counties in 2003; of these, 1,762 birds fit the criteria for WNV testing. During the first eight months of 2003, collection and testing of birds was focused on corvids (i.e. crows, ravens, jays, and magpies), raptors, finches, and sparrows. To enhance surveillance efforts in southern California subsequent to the detection of WNV in local birds, target species were expanded to include all wild bird species with the exception of doves and pigeons. The bird carcasses were shipped to the California Animal Health and Food Safety Laboratories (UC Davis or San Bernardino) which removed organ tissues and forwarded them to CVEC for WNV testing.

The first bird to test positive for WNV in California was a dead crow collected September 3rd from Los Angeles County. In 2003, 96 birds tested positive for WNV from five southern California counties: Los Angeles (65), Riverside (13), San Bernardino (10), Orange (3), and San Diego (5). Nine bird species tested positive for WNV: American Crow (*Corvus brachyrhynchos*, n=84), Brewer's Blackbird (*Euphagus cyanocephalus*, n=1), Common Raven (*C. corax*, n=1), House Finch (*Carpodacus mexicanus*, n=2), House Sparrow (*Passer domesticus*, n=3), Northern Flicker (*Colaptes auratus*, n=1), Northern Mockingbird (*Mimus polyglottos*, n=1), Western Scrub Jay (*Aphelocoma coerulescens*, n=2), and White-crowned Sparrow (*Zonotrichia leucophrys*, n=1).

## Human and Equid Testing Summary:

Human Encephalitis/	Number Tested	WEE Positive Imported / Local		SLE Positive Imported / Local		WNV Positive Imported / Local		Other Positive Imported / Local	
WEE	24	0	0	0	0	0	0	0	0
YTD	43	0	0	0	0	0	0	0	0
Suspect Equine Viral Encephalitis Cases									
WEE	15	0	0	---	---	0	0	0	0
YTD	15	0	0	---	---	0	0	0	0

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## Sentinal Chicken and Mosquito Pool Testing Summary:

Chickens:	Number Tested	WEE Positive	SLE Positive	WNV Positive	Other Positive
Wee	987	0	0	0	---
YTD	1621	0	0	0	---
<b>Mosquito pools:</b>					
Wee	167	0	0	0	0
YTD	167	0	0	0	0

## Dead Bird Reporting / Testing Summary:

Dead Birds:	Number Reported	Number Tested*	WNV Positive
Wee	167	33	0
YTD	281	68	0

### Comments:

In 2003, a total of 46 states New York City (NYC) and the District of Columbia (DC) have published WNV activity. A total of 45 states plus DC have published 9,122 human cases. Among 9,004 WNV cases with available clinical and demographic data, the median age was 47 years (range: 1 month - 99 years), and 4,769 (53 percent) were in males. There have been a total of 223 published WNV-related fatalities. The median age of 218 decedents was 77 years (range: 1 month – 97 years).

For updated information on WNV, please visit the CDC website, <http://www.cdc.gov>; the USGS website, <http://westnilemaps.usgs.gov>; the California WNV website, <http://westnile.ca.gov>; and other vector-borne disease information, <http://vector.ucdavis.edu/surveillance/default.html>

### Chicken Sera Received and Tested Since Last Bulletin at VRDL:

County	State	ACODE	Total Flocks	Date Bled	Date Received	Total Chicken
IMPERIAL	CA	IMPR	3	05-Jan-04	14-Jan-04	30
LOS ANGELES	CA	GRLA	5	07-Jan-04	26-Jan-04	96
LOS ANGELES	CA	LACW	20	03-Jan-04	20-Jan-04	110
LOS ANGELES	CA	LONG	4	05-Jan-04	26-Jan-04	68
MONTEREY	CA	NSAL	1	14-Jan-04	20-Jan-04	10
ORANGE	CA	ORCO	1	06-Jan-04	27-Jan-04	20
RIVERSIDE	CA	COAV	6	05-Jan-04	15-Jan-04	60
RIVERSIDE	CA	NWST	6	12-Jan-04	20-Jan-04	57
RIVERSIDE	CA	RIVR	6	07-Jan-04	15-Jan-04	65
SAN BERNARDINO	CA	SANB	7	05-Jan-04	26-Jan-04	138
SAN BERNARDINO	CA	WVAL	5	07-Jan-04	23-Jan-04	54
SAN DIEGO	CA	SAND	3	12-Jan-04	20-Jan-04	28
SAN LUIS OBISBO	CA	SLOC	2	12-Jan-04	15-Jan-04	20
SANTA BARBARA	CA	SBCO	5	05-Jan-04	26-Jan-04	91
VENTURA	CA	VENT	4	06-Jan-04	23-Jan-04	80
Chicken samples received:						927

### Chicken Sera Tested This Week at Local Agencies:

County	ACODE	Total Flocks	Date Bled	Total Chicken
Los Angeles	SGVA	11	28-Jan-04	60
Chicken samples received:				60

### Dead Birds Submitted for Testing Since 1/1/04:

County	Species	Number Reporte	Number Submitted
Alameda	American Kestrel	1	
Alameda	Seagull	1	
Calaveras	Blackbird	1	
Contra Costa	American Crow	1	
Contra Costa	Blackbird	1	
Contra Costa	Sparrow	1	
El Dorado	Cedar Waxwing	1	
El Dorado	Common Raven	1	1
El Dorado	Flicker	1	
Fresno	American Crow	1	

### Mosquito Pools Received Since 1/1/04 at CVEC:

Agency	Date Received	#
COAV	06-Jan-04	47
GRLA	15-Jan-04	16
IMPR	06-Jan-04	83
ORCO	30-Jan-04	48
ORCO	06-Jan-04	37
Mosquito pools received:		231

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Fresno	Pigeon	2	
Fresno	Yellow-rumped warbler	1	
Inyo	Common Raven	1	
Inyo	Sparrow	1	
Kern	Common Raven	1	1
Kings Co	Peregrine Falcon	1	
Lake	American Crow	1	1
Lake	Sparrow	1	
Los Angeles	American Crow	30	11
Los Angeles	American Kestrel	1	1
Los Angeles	Blackbird	1	
Los Angeles	Dove	2	
Los Angeles	Ducks	10	
Los Angeles	Finch	1	
Los Angeles	Hawk	4	
Los Angeles	Hummingbird	1	
Los Angeles	Jay	1	
Los Angeles	Owl	1	
Los Angeles	Pigeon	14	
Los Angeles	Red-shouldered Hawk	1	1
Los Angeles	Robin	2	
Los Angeles	Sparrow	5	
Los Angeles	Western Scrub-Jay	2	
Marin	Mockingbird	1	
Mendocino	American Crow	1	
Merced	Common Raven	1	
Mono	Warbler	1	
Monterey	American Crow	1	
Napa	Robin	1	
Orange	American Crow	4	4
Orange	House finch	1	1
Orange	Sharp-shinned Hawk	1	1
Placer	Gold finch	1	
Placer	unknown	1	
Riverside	American Crow	5	3
Riverside	Blackbird	1	
Riverside	California Towhee	1	
Riverside	Common Raven	1	1
Riverside	crow	1	
Riverside	Owl	1	
Riverside	Pigeon	1	
Riverside	Sparrow	3	
Riverside	Western Bluebird	1	1
Riverside	Western Scrub-Jay	1	
Riverside	Yellow-rumped warbler	1	
Sacramento	American Crow	29	12
Sacramento	Brewer's Blackbird	6	
Sacramento	crow	2	
Sacramento	hawk	1	
Sacramento	Pheasant	1	
Sacramento	Starling	1	
Sacramento	Unknown	1	
Sacramento	Western Scrub-Jay	1	
Sacramento	Yellow-billed Magpie	1	
San Bernardino	American Crow	3	1

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San Bernardino	Brewer's blackbird	1	
San Bernardino	Common Moorhen	1	
San Bernardino	Common Raven	1	
San Bernardino	Hummingbird	1	
San Bernardino	Pigeon	4	
San Bernardino	Robin	2	
San Bernardino	Sparrow	13	
San Bernardino	Unknown	2	
San Bernardino	Western Kingbird	1	1
San Diego	American Crow	3	1
San Diego	Dove	1	
San Diego	Greckel	1	
San Diego	Robin	1	
San Francisco	American Crow	1	
San Joaquin	American Crow	1	
San Joaquin	Hawk	1	
San Joaquin	Unknown	2	
San Luis Obispo	Sparrow	1	
San Mateo	pigeon	1	
Santa Barbara	American Crow	1	1
Santa Barbara	sparrow	2	
Santa Barbara	Wren	1	
Santa Clara	American Crow	2	2
Santa Clara	Hawk	1	
Santa Cruz	Pigeon	1	1
Solano	Red-winged blackbird	1	
Sonoma	American Crow	1	1
Stanislaus	American Crow	10	
Stanislaus	Great horned owl	1	
Sutter	American Crow	15	11
Sutter	Barn owl	1	
Sutter	Common Raven	1	1
Sutter	Western Scrub-Jay	1	
Ventura	American Crow	1	1
Ventura	Common Raven	1	1
Yolo	American Crow	26	5
Yolo	Yellow-rumped warbler	1	
Yuba	American Crow	2	2
Total Reported / Submitte		281	68

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Dried blood spot specimens from sentinel chickens submitted each week to the DHS Viral and Rickettsial Disease Laboratory (VRDL) are tested for the presence of antibodies to western equine encephalomyelitis (WEE), West Nile virus (WNV) and St. Louis encephalitis (SLE) viruses by EIA and IFA. The VRDL performs additional testing (including Plaque reduction Neutralization (PRNT) and IgM Capture - Enzyme Linked Immunosorbant Assay (MAC-ELISA)) on specimens from sentinel chicken in which antibodies are detected in new geographic areas. The VRDL also forwards selected serum to the U.C. Davis Center for Vectorborne Diseases (CVEC) for additional testing for WNV, SLE, and WEE antibodies.

All mosquito pools are currently tested by CVEC by in situ EIA for WEE, SLE, WNV. All species except *Culex tarsalis* are also tested for CEV. Pools from select districts are being tested by Taqman for WEE, SLE, and WNV. All EIA positive pools are confirmed by Taqman. Additional viral testing may include reverse transcriptase polymerase chain reaction (RT-PCR) and viral sequencing.

All dead bird kidney tissues are tested by CVEC using the Taqman assay. Organ pools from the carcasses are tested using cell culture for virus isolation. Dead bird totals in this report are for the prior week.

\*Orange County VCD screens and tests birds for WNV reported in their county and provides weekly updates to DHS. Butte County MVCD, San Bernardino County VCP, and San Diego County VSCP provide weekly updates to DHS of birds reported to them that did not meet DHS testing criteria.

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